In the UK the F200 Platemeter is supplied to you by
Agricultural Supply Services.
01453 860860
www.agrisupplyservices.co.uk

FARMWORKS
TOOLS FOR MAXIMUM GROWTH

F200 Electronic Rising Plate Meter User Manual

The F200 Electronic Rising Plate Meter provides farmers with a reliable and accurate method of measuring pasture within a given range. It provides a valuable tool for maintaining consistency in the measurement of pasture when undertaken by more than one person by providing a benchmark to reduce variations in visual assessments.

It has been widely used in the dairy industry for a number of years and more recently in sheep, beef and deer enterprises. Currently the FARMWORKS Plate Meter is sold in over fourteen countries including Australia, Chile, Argentina, Uruguay, Mexico, USA, Canada, United Kingdom, South Africa, China and Japan.

*In New Zealand it is used by both farmers and consultants to provide pasture height and density for determining feeding regimes for given classes of stock. A companion product is the **P-Plus** PastureCover software program which provides a useful tool for recording and reporting pasture covers obtained by the Plate Meter.*

*The **Electronic Plate Meter** is made up of the following components; metal shaft, handle with inner tube, a black tube to which the black plastic plate is attached and one electronic counter. The metal shaft is graduated into 0.5cm grooves (a click).*

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1. Assembling the Rising Plate Meter

Normally the Plate Meter will come already assembled and will only require two steps to complete ready for use, as follows:

- Screw the inner tube of the yellow handle onto the threaded top of the graduated shaft
- Screw on the black plastic plate to the lower end of the black tube.

If you are retro-fitting an electronic counter to a Manual Plate Meter, then follow the steps outlined in section 9. Retrofitting an Electronic Counter to a Manual Plate Meter.

2. Operating the Electronic Counter

2.1. Switching Unit On and Off

The Electronic Plate Counter is switched on and off using the toggle switch at the back of the unit. Off is in the 'up' position. When the unit is off there are no numbers displayed on the LCD screen

2.2. The Front Display Buttons

The various functions of the F200 are accessed by the two buttons on the front of the unit, labelled '**Avg**/Reset' and '**Count**/Formula'. The wordings in bold type are the primary functions. These are activated by a short press of the button. The secondary functions 'Reset' and 'Formula' are activated by holding the button down until the function operates.

When the unit is first switched on the display will show the model number, the current formula in use and finally the calculated ***kgDM/ha*** based on that formula, and any readings in memory. Pressing the "Avg" button will briefly display the ***Average pasture height.*** This is often referred to as "clicks" (measured in 0.5cm) and will be displayed to one decimal place (i.e. 0.0 or 12.4).

Note: 1 click= 0.5cm

2.2.1 The ***number of readings*** is displayed when '**Count**' button is pressed. The display will show a 'c' on the left side and the ***count*** on the right. The display will return to normal after 2 seconds.

2.2.2 All readings can be cleared (reset) by holding down the "Reset" button for approximately 2 seconds, then the display will change to "0".

2.3. Things to do before you start your walk

There are four items to be addressed before starting a new walk. This is best done prior to leaving the shed to start a pasture walk.

2.3.1. Ensure the P-Plus Farm Management Software is Installed

Before you can begin using your F300, you will need to ensure that you have P-Plus Farm Management software installed on your computer. If it is not installed you will need to refer to the section on How to install P-Plus Pasture Cover.

With P-Plus Farm Management Software installed on your computer, you will need to setup your farm by creating a property, paddocks, and equations and define the walk order, before you can upload Pasture Cover walks from your F300 Platemeter.

Ensure you are not using the demonstration Farm

2.3.2. Start up/Self test

Switch On. The unit will beep and display 'F200'. It may also beep 3 times and display 'Lo' if the battery needs recharging. The current formula in use will be displayed next with the '+' part of the equation first (default 500) and then the 'x' part second (default 140).

The display will then show the kgDM/ha calculation based on that formula and any readings stored in memory. To clear the readings, press and hold the 'Reset' button until the display shows '0.0'

There is one default plate equation, and one custom (user editable) equation. The former is built into the chip and cannot be replaced or modified. This equation is typically used between April and September in New Zealand.

In 2001 new research provided new formula options that were more relevant to regions, pasture types and management techniques, i.e. irrigated pasture. The research also provided equations to more accurately reflect the physiological state of the pastures e.g. vegetative versus reproductive state.

Some examples are:

Cover (kgDM/ha) = 158 x height

Cover (kgDM/ha) = 158 x height + 1000

Cover (kgDM/ha) = 158 x height + 200

The counter also provides an option for selecting your own equation or those recommended by consultants, DEXCEL or Meat & Wool. When you receive your counter it will normally be setup for the DEXCEL recommended equation for the autumn/winter months. Please refer to Section 3 Current New Zealand Dairy Equations for examples of the DEXCEL equations.

2.3.3. Entering the factory default formula.

While the F200 is switched on, hold down the 'Formula' button. The display looks like this 'F_ _ d', press the 'Reset' button briefly. The display will then show (500) and then (140). The default formula has now been loaded and saved to memory. To enter your own formula please refer to section 3.1 Entering your own formula

2.3.4. How to Zero Calibrate your Platemeter

To ensure the Plate Meter accurately measures the compressed height of pasture, the counter must be calibrated. This requires setting a base level of zero so measurements can be benchmarked against this. If the counter does not return to zero after each "plonk" it will not record the measurement - hence the counter will not beep.

If the counter is removed from the black tube or receives a severe knock it may jump a groove on the steel shaft which will put the counter out of calibration. It will need to be recalibrated.

To make this adjustment, you will need a small flat blade screwdriver that will fit into the slot of the blue shaft at the back of the counter.

To perform the calibration, please refer to the following steps:

2.3.1.a. Ensure the plate is fully down (place on a firm flat surface) and the unit is switched **off**.

2.3.1.b. Hold down the '**Count**' button while switching the unit on. The display will change to 'CAL' briefly and display a colon ':' followed by a number. Let's assume you see ' : 5' when you switch on. Proceed as follows.

2.3.1.c. The colon signifies that it is in fine calibration mode. Use a flat blade screwdriver and turn the blue plastic shaft within the cog, clockwise (looking at the display) until the display reads '0'. NB: The cog and steel shaft must remain stationary. **DO NOT TURN THE SHAFT BEYOND THIS POINT OR YOU MAY DAMAGE THE POTENTIOMETER!**

2.3.1.c. Once the counter reads zero, move the counter up the full length of the shaft. The colon will disappear once it passes 9 and enter 'clicks' mode. At full height the display should read '50', which is 50 half centimetres. The counter has now been calibrated successfully.

2.3.1.e. Switch off when you have finished, and then back on again without pressing any buttons.

2.3.1.f. Test the zero calibration by raising and lowering the plate several times. A beep should sound and the kgDM/ha is displayed on the LCD screen as the plate falls. If it does not, repeat the steps above and retest.

2.3.1.g. If the calibration fails to hold then check the black saddle is screwed down firmly, and the F300 does not twist easily on the steel shaft. Otherwise the potentiometer, which the cog drives could be faulty and will need replacing. This can occur with excessive wear often compounded by dust and dirt entering the dry bearing of the potentiometer. See section 7. Caring For Your Plate Meter".

3. Current New Zealand Dairy Equations

For your convenience the following are the equations promoted by Dexcel for dairy pastures since May 2001. Please refer to the section on 2.3.3 Entering the Formula for more information on how to enter the appropriate equation.

These formulas are in P-Plus already and to use them you will need to enter them into your F200 Platemeter.

Months	**Rising Plate Meter Equations** **Dairy Pastures**
Winter (April-Sept)	Plate Meter Reading x 140 + 500 (Factory Default)
October	Plate Meter Reading x 115 + 850
November	Plate Meter Reading x 120 + 1000
December	Plate Meter Reading x 140 + 1200
January	Plate Meter Reading x 165 + 1250
February	Plate Meter Reading x 185 + 1200
March	Plate Meter Reading x 170 + 1100

Equations may change without notice and are influenced by seasonal differences. If you are unsure of the current equation contact Dexcel or your local consultant. There are also different equations suited to summer, wet and irrigated pasture which are not recorded here.

Sheep and Beef pastures differ in density to dairy pastures and will therefore require different equations. Meat & Wool are currently researching appropriate equations for their industry. If you are unable to obtain a formula we suggest that you use the default Formula that is built into the counter.

3.1 Entering your own formula.

To enter your own cover equation or one that may have been recommended by a third party such as your consultant, Dexcel or Meat & Wool please do the following:

3.1.1 While the F200 is switched on, hold down the 'Formula' button. The display looks like this 'F_ _ d' Press the formula button again briefly the change the 'd" (default) to 'c' (custom). Now press 'Reset' briefly and the display will look like this: '0_ _ _'. This is the first of two numbers you will enter. The first number is the equation 'add' number and the second the 'multiply' number. For example in equation 2 above, the first number (115) is the 'multiply' number and the second (850) is the 'add' number.

3.1.2 The 'add' number is 4 digits long and can range from 0 to 9999. Starting with the first digit, press the 'Formula' button to change this digit to a value from 0 to 9. Press the 'reset' button when it is correct. NB: 850 for example would be entered as (0850). The next digit will change to a zero. Repeat this process until all 4 digits have been entered. The display then changes to the 'multiply' number.

3.1.3 The 'multiply' number has 3 digits and can range from 0 to 199. The first digit will appear as '0' Press the Formula button to change this digit to a value of '0 or 1' Press the Reset button when it is correct and the next digit will appear. The last two digits can have values from '0 to 9'. Repeat this process until all digits are entered and the display returns to its normal state.

4. Taking Paddock Readings (The Pasture Walk)

It is recommended you print off the Pasture Cover Walks "Cover Entry Form" from your P-Plus software program before undertaking a Pasture Walk. This will enable you to record each paddock height/cover for later inputting into the program. It will also provide a copy of the previous two walks (if available) for comparison.

4.1 How to Take Paddock Readings

4.1.1 Switch the unit on using the toggle switch at the back of the unit.

4.1.2 Reset by holding the 'Reset' button until the display changes to '0'. This should be accompanied by 2 short beeps.

4.1.3 Walk across the paddock taking readings every few paces. You will hear a beep every time a reading is stored. The kgDM/ha is immediately recalculated and displayed. The number of samples (plonks) to be taken should range between 20 and 40 per paddock however this will be determined by the variance existing in the cover. You will hear 3 short beeps when you have completed 29 plonks and one long beep when you reach 30. This is the recommended number of readings. Plonks need to be taken on a regular basis e.g. every five paces to even out any variations, however avoid stock camp areas, tracks or uncharacteristic areas. The greater the variability the greater the number of plonks you should take.

4.1.4 If you need to negotiate an obstacle (e.g. fence or creek) switch the unit off so that no readings are taken if the plate moves. On the other side of the obstacle, switch the unit back on and continue taking readings.

4.1.5 When you have completed the paddock, press the '**Avg**' button to show the average pasture cover.

4.1.6 Write down the average height and/or the average cover.

4.1.7 Repeat instructions 2 to 5 until you have completed every paddock.

4.1.8 Switch the unit off using the toggle switch at the back.

5. The Battery.

5.1 Recharging the Battery

The Electronic Counter is powered by a single 9V NiMH rechargeable battery, which should give 24-26 hours continuous use between charges.
A low battery warning is built in to the counter and might be displayed when switched on. You can continue to take readings, however it is recommended the battery is recharged before using the plate meter for an extended period of time.

The F200 should be switched OFF during recharging. Attach the charger to the small socket on the side of the counter, that was supplied with you plate meter. Switch on the wall socket and the display should show ' Ch ' Decimal points will scroll along the bottom of the display. This will continue for approx 5 hours, after which the display will show 'FULL'. The battery is now charged. No damage will occur if the charger is left on beyond this. For best results, occasionally allow the F200 to remain on charge overnight. Unplug the charger and switch the F200 'ON'. There should not be any low battery warning. The rechargeable battery should give years of service before needing to be replaced.

5.2 Replacing the Battery (NiMH 8.4V rechargeable).

The NiMH 9 Volt battery can be recharged hundreds of times, but eventually the serviceable time between charges will shorten. When this happens, a replacement battery should be fitted. Before you replace the battery make sure the unit is switched off. Remove the counter from the black tube and loosen the screw in the middle of the counter back. Pull out the battery retainer clip from the bottom of the counter. Remove the battery and gently remove the battery snap. To avoid damage to the battery snap it is recommended you use a screwdriver to flip off the battery clip as damage can occur to the internal connections if grasped by fingers and pulled off. ***Replace the battery with the same type and specification as the one that came with your counter.*** Press the battery snap firmly onto the new battery and insert back into the battery retainer. Replace the battery retainer into the counter taking care not to catch the wires in the side wall of the counter. Tighten the central screw on the back and refit to the black tube. Charge the battery for at least 16 hours before initial use. Make sure the counter is re-calibrated before you commence your next walk.

6. Using the Correct Measuring Technique

Differences in Rising Plate Meter measuring technique can alter pasture covers by as much as 600 kgDM/ha. This can be the difference between thinking there is adequate or even surplus pasture available and all is well, or pasture deficit and urgent action is required.

All pasture measurement techniques require calibration to convert the actual reading to dry matter. The technique that is used when walking around the farm taking the measurements needs to be the same as that used to calibrate the Rising Plate Meter. This technique is to place the plate on top of the pasture with no downward force, and then push the shaft to ground level - making sure the plate is vertical when the shaft hits the ground.

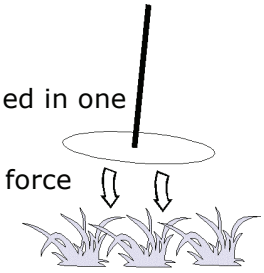
Taking measurements by holding the Plate Meter 10cm or more above the top of the pasture and plunging the plate onto the pasture will give lower, incorrect readings. This is because the downward force of the plate compresses the pasture more than occurred when the calibrations were down, giving a lower average height and cover readings.

These two techniques are illustrated below.

6.1. Incorrect Technique

6.1.1 The Plate Meter is held above the pasture and plunged in one movement onto the pasture.

6.1.2 The higher the plate is held and the greater the force applied, the lower the reading will be.

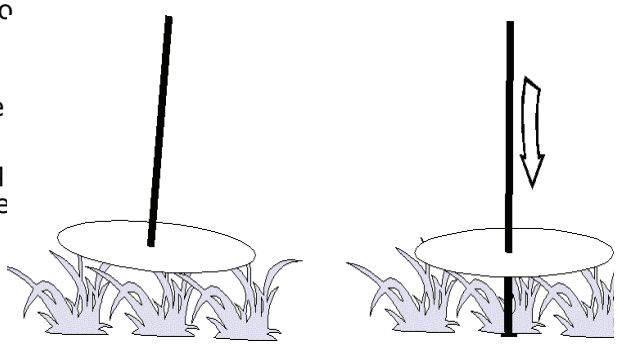


6.2. Correct Technique

6.2.1. Place the plate on top of the pasture with as little pressure as possible.

6.2.2. Push the shaft down to ground level with the shaft vertical.

When using the correct technique, no differences have been found in the readings between the FARMWORKS Electronic Plate Meter and any of the mechanical Plate Meters. However, operators using the incorrect techniq will get lower readings with any Plate Meter than those using the correct technique.



7. Caring For Your Plate Meter

7.1 **Avoid getting the counter wet.** The counter is in a robust case which is splash proof, however, as it is an electronic device, so try to avoid getting the counter saturated.

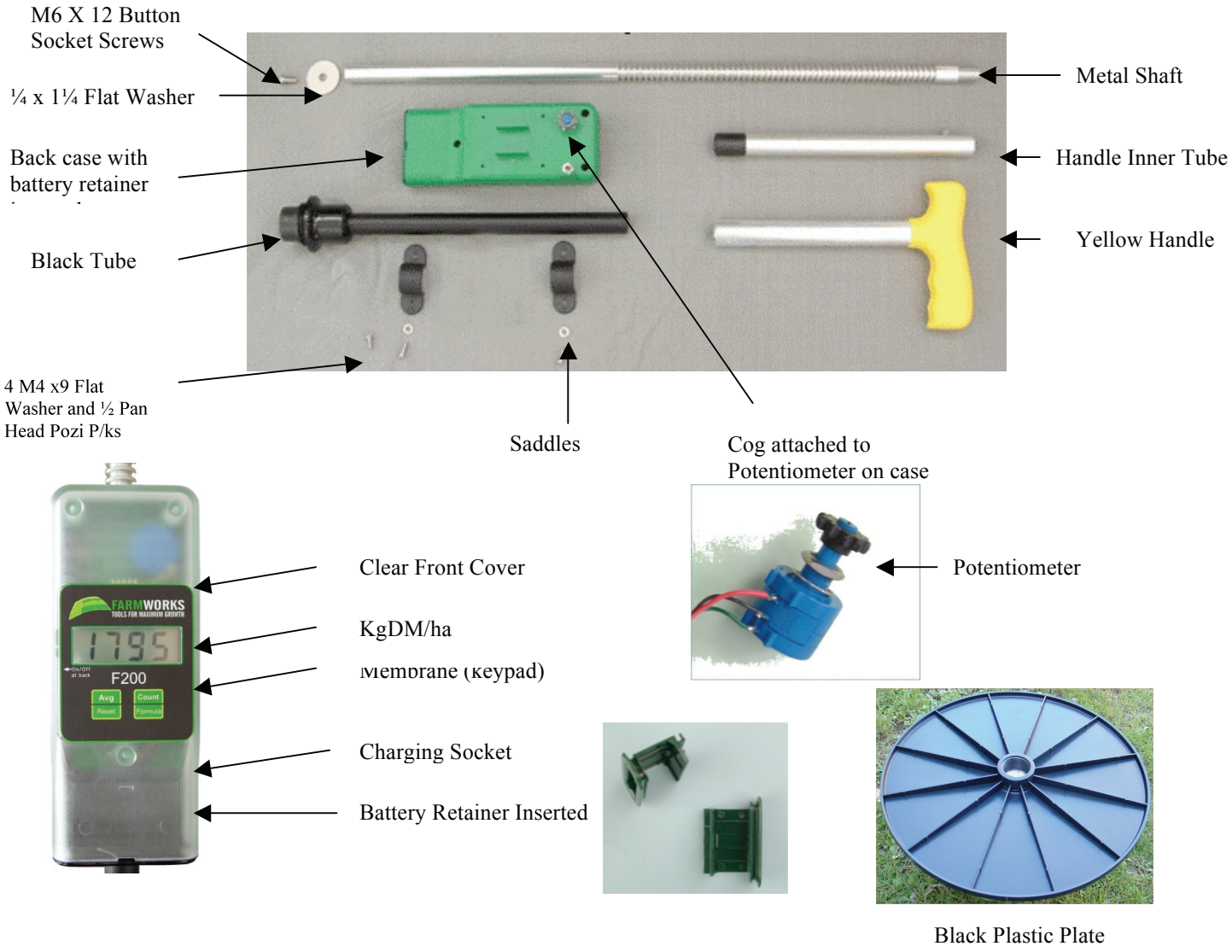
7.2 **Keep the shaft clean**. The shaft can get a build up of dirt which affects the accuracy of the Plate Meter as the shaft will not run smoothly, and more force is required to take a reading. Clean the shaft with a poly pad or similar. Do not use lubricant as this will build up inside the black outer shaft.

7.3 **Remember to check the counter is switched off between cover walks.** The switch is easily left on which will waste the battery.

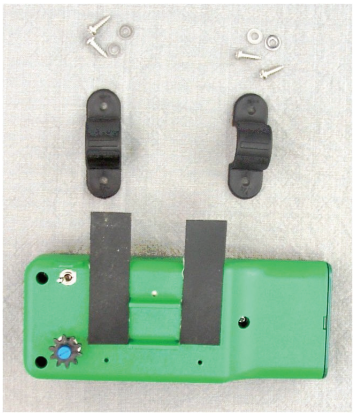
8. Component Parts

If your Plate Meter is damaged or you require replacement parts please refer to the diagram below to identify the correct part. In general all components are readily replaceable by the user except for the potentiometer, membrane, or components within the counter.

Contact: APOLLO ELECTRONICS LTD, to discuss servicing options.



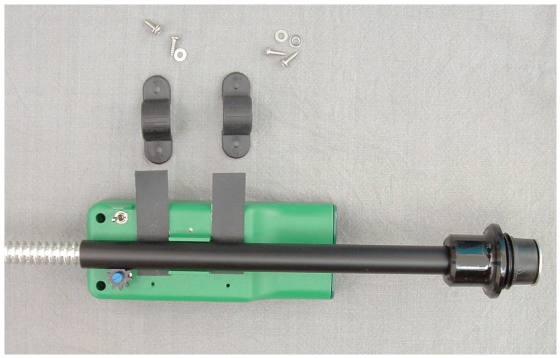
9. Retrofitting an Electronic Counter to a Manual Plate Meter



An electronic counter can be attached to most manual Plate Meters with little or no modification. However it is essential that care is taken to ensure it is correctly attached and aligned to ensure smooth operation.

9.1. Remove all existing mechanical counters from the Plate Meter (if applicable).

9.2. Check that a cog is attached to the small shank on the back of the counter. To attach a cog to the shank of the counter DO NOT USE EXCESSIVE PRESSURE. It is best to heat the cog in a hot cup of water prior to pressing onto the shaft



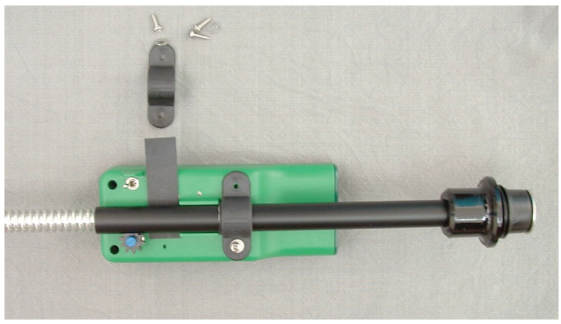
9.3. Lay the Electronic Plate Counter face down on a flat surface so that the cog and the on/off switch are to your left.

9.4. Turn the cog on the counter anti-clockwise (to the left) until it stops.

9.5. Hold the Plate Meter with the handle to the left. The slit in the shaft where the cog fits should face toward you.

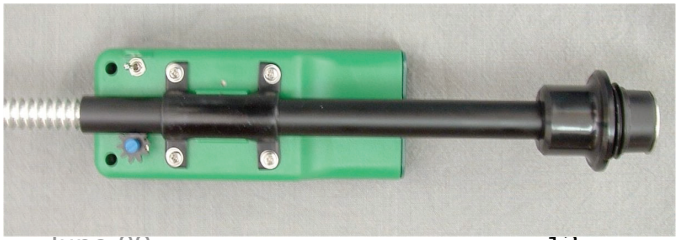
9.6. Make sure the metal shaft is fully closed to the bottom end of the black tube. If you have difficulty keeping the plate closed we suggest that you bind some tape around the large washer and the bulb of the black tube.

9.7. Take two strips of rubber and lay these on the surface of the counter so that the end of the rubber lies 2.5cm from the edge of the counter. Place the black tube with the steel shaft inserted onto the back of the counter, fitting the Cog into the slit of the tube. The Cog should be situated mid-way in the slit in the black tube.



9.8. Wrap the rubber strip around the black tube and place the plastic bracket onto the rubber strip, aligning the holes in the brackets with the holes in the back of the counter. (Complete for both brackets).

9.9. Place a screw and washer in each side of the two clips and half tighten; making sure that the Cog is not too close or too far away from the metal shaft, tighten the four screws. The metal shaft should move



freely inside the black tube. Turn it to make sure it moves easily in all positions. If it sticks then either the black tube or metal shaft may be damaged, bent or corroded and may need replacing, or it is not correctly aligned on the counter.

9.10. Attach the plastic plate by screwing on to the bulb of the black tube.

9.11. Place the Plate Meter in an upright position on a hard surface to check the plate closes fully.

9.12 IMPORTANT: Before attempting your first pasture walk follow the instructions for "Zero Calibration" under Start up Options in Section 2.3.1

Enhancement: In early 2006 the black tube has been modified to accept a single saddle arrangement which will reduce the need for the rubber strips and provide greater binding therefore reducing the chances of the saddle moving on the shaft.

Servicing

9.13. Should an electronic fault develop with your F200 plate meter, then the counter should be removed from the shaft and sent for servicing to:

Apollo Electronics Ltd
4 Lombard Street
Palmerston North, 4410
Ph: 06-3551497
p.sullivan@xtra.co.nz

A standard service charge including return freight (in NZ), applies to all electronic repairs. (No electronic components are sold as spare parts). If in NZ; Contact Apollo Electronics Ltd to establish the current standard cost and enclose a crossed cheque payable to Apollo with your counter.

If the complete plate meter is sent for repair, any further mechanical parts that need to be replaced there will be at an additional cost. All Mechanical components as shown above can be purchased as a spare part. Please contact Apollo Electronics Ltd for pricing.

If outside New Zealand then contact your local distributor.

10. Trouble Shooting

10.1. There is no visual display>>

Check	Resolution
The Counter is turned on	
The battery is not flat	Replace battery
If you have just changed a battery you may have damaged the battery snap (clip to top of the battery)	Service – send to Apollo Electronics Ltd

10.2. The counter does not "beep" when taking a reading>>

If it doesn't beep this means the counter does not know where the bottom is - therefore does not record the "plonk"

Check	Resolution
The counter can become uncalibrated if it receives a knock and the cog jumps a notch on the metal shaft	**Zero calibrate**. To do this, work through the following steps: a. Ensure the plate is fully down (when holding by the handle and the plate is off the ground) **and the unit is switched off** b. Hold down the 'Count' button while turning the unit on. The display will look like ' : 0'. c. When correctly calibrated the last digit should flicker between 0 and 1. If it does not do that then turn the *blue* shaft (which supports the cog at the back of the unit) with a screw driver. Make sure you turn the shaft within the cog and it is not moving the steel shaft. As you turn you will see the numbers increasing or decreasing. Adjust the blue shaft until the digit on the display reads 0. d. Turn off then on again when you have finished. e. Test the zero calibration by raising the plate and replacing it several times. A beep should sound and the height displayed as the plate falls. If it does not, repeat the steps above and retest. If the calibration fails to hold then the potentiometer, which the cog drives through the shaft is probably faulty and will need replacing. This can occur with excessive wear often compounded by dust and dirt entering the dry bearing. You will need to send the Counter to **Apollo Electronics Ltd** for service and repair.
Ensure the cog is not slipping on the blue shaft (potentiometer)	Replace the Potentiometer and Cog. Send to **Apollo Electronics Ltd** for service and repair.

Check	Resolution
The cog has wound off.	Replace - Request a spare cog from **Apollo Electronics Ltd**
Potentiometer damaged. The Potentiometer is the blue part that drives the cog NB: Under no circumstances should you apply CRC or light oil to the potentiometer. It is a dry bearing and any lubricant will render the potentiometer useless).	Send to **Apollo Electronics Ltd** for service and repair.
Check the metal shaft is coming right back into the base of the black tube. Ensure there is no grass or soil build-up preventing it from doing so. Also check the large washer at the bottom of the shaft is not catching on the bottom of the plate.	Clean the Plate Meter.
Check the cog is running smoothly on the shaft. If the counter is mounted too close to the metal shaft there will be quite a lot of friction when taking a reading. If the counter is mounted too far away from the metal shaft; the cog is liable to jump a notch easily.	Re-assemble the Plate Meter.

10.3. Cog becoming worn >>

Check	Resolution
Not aligned correctly on the shaft.	Re-align the cog or replace the cog Order from **Apollo Electronics Ltd.**

10.4. The counter continuously beeps and eventually turns off>>

Check	Resolution
This is normally due to a low battery. The counter requires a given level of power to operate correctly. If the battery doesn't have sufficient power it may continuously beep to warn you. Remember if you turn the counter off for a few minutes it may recover slightly but the problem will not go away.	Recharge the battery. Battery may be due for replacement. Requires electronic service.

10.5. Plate Meter not running freely>>

Check	Resolution
Metal shaft is bent.	Straighten or request a replacement part from **Apollo Electronics Ltd.**
Grass or soil build-up inside the black tube.	Clean the Plate Meter.
Flutes on steel shaft have become filled with grass or soil.	Clean the Plate Meter.

10.6. Counter Readings do not seem accurate>>

Check	Resolution
The counter is like a calculator - it does not give false readings under normal circumstances.	Check the equation being used is correct and the calibration has been correctly set. (zeroed)
Cover Equations In New Zealand there are a number of standard equations published by DEXCEL and Meat & Wool. These reflect regional pasture types. If you wish to change an equation or select alternative species you will need to contact your consultant. Traditionally the equation of height X 158 plus 200 was used however there has been a series of equations produced to reflect changes in pasture types and physiological state (vegetative, flowering, seed head) which can alter DM levels in the paddock. A more accurate calibration can be achieved by taking cuttings or your consultant may be able to advise you on the most appropriate equation for your situation. This particularly applies to pastures under irrigation.	Check what equation you are using.

10.7. Front Panel (membrane) problems>>

Check	Resolution
Buttons not clicking or activating.	Service - membrane needs replacing. Send to **Apollo Electronics Ltd** for service and repair.

10.8 Battery Retainer keeps falling out>>

Check	Resolution
The counter screws have not been tightened sufficiently.	Make sure the centre screw is re-tightened after the battery is replaced or ensure the battery retainer is properly clicked into place.

10.9. How do I change a formula? >>

Check	Resolution
The F200 is switched on. If you wish to select the inbuilt default formula.	Hold down the 'Formula' button until the display changes to 'F d'. While the 'd' is displayed, press the 'Reset' button. The following equation is used: Cover (kgDM/ha) = 140 x height +500

10.10. How do I enter my own formula? >>

Check	Resolution
The F200 is switched on. Note: Refer to Section 3. for current Dexcel formula.	a. Hold down the 'Formula button until the display changes to 'F d'. Press the 'Formula' button again to change the 'd' to a 'c' Now press the 'Reset' button and the display looks like ' 0 _ _ _' . The display will then show you the first of two numbers you will enter. The first number is the equation 'add' number and the second the 'multiply' number. For example in equation 1 above, the first number (140) is the 'multiply' number and the second (500) is the 'add' number. b. The 'add' number is 4 digits long and can range from 0 to 9999. Press the 'Formula' button to change this digit to a value between 0 and 9. When it is correct press the 'Reset' button. Enter the next digits the same way. Repeat this process for all 4 digits until the display changes to the 'multiply' number. NB: (500) would be entered as (0500) c. The 'multiply' number has 3 digits and can range from 0 to 255. Enter the first digit by pressing the 'Formula' button to change this digit to either 0 or 1. Press the 'Reset' button when it is correct and continue to the next digit. The last two digits can have values from 0 to 9. Repeat this process until all digits have been entered and the display returns to its normal state.

11. Maximise the value of your Plate Meter by Installing and Running the P-Plus PastureCovers Software Program

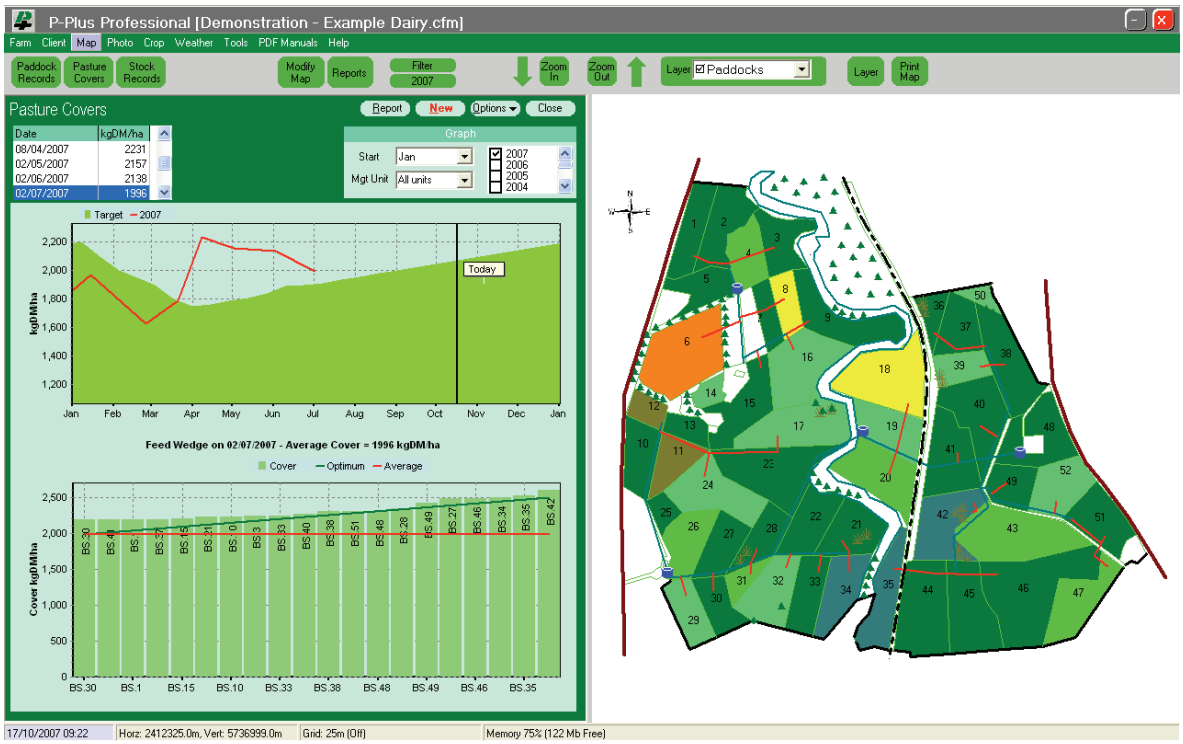
11.1 What is P-Plus PastureCovers?

This is a computer software program supplied FREE with any purchase of the Electronic Rising Plate or the Electronic Counter. Instructions for installation are contained in this manual. By entering the pasture covers recorded with the electronic counter it provides the user a number of reporting options often required to meet feed allocations. Such reports include pasture covers on date, cover over time, the feed wedge and growth rates.

The software can be used in conjunction with most pasture measuring devices including the manual platemeter.

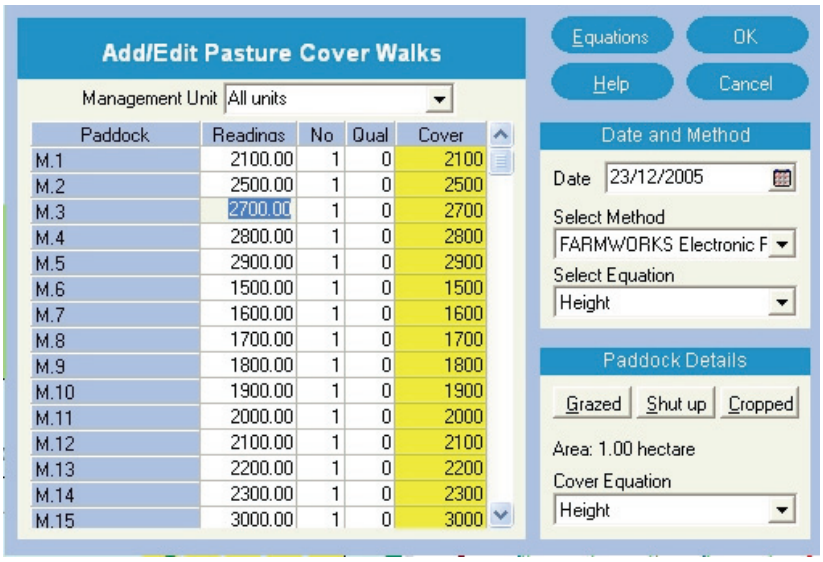
The program will also work in combination with the P-Plus Mapping and Feed Forecasting/Budgeting software. For pricing refer to the Top 14 Questions document printed further on in the manual.

Below is an example of the screen layout of the P-Plus Full program.
This screen displays pasture covers over time, a feed wedge (TOP 20 paddocks only by default) and the covers displayed on the farm map. Note the Map is only shown if the Mapping module is also purchased. Pricing is shown further on in this manual. Full Feed Wedge, showing surplus and deficits can be printed along with ranked paddock covers.

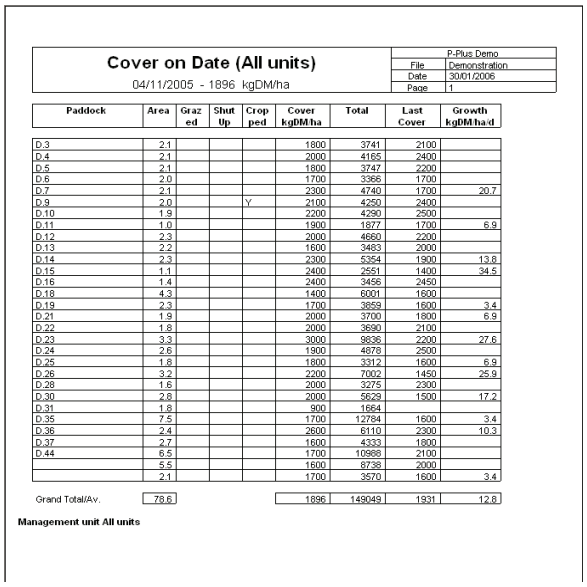


11.2 Entering pasture covers is simple through the data input screen

Data entry screen allows either height or pasture cover in KGDM/ha to be entered



Similarly reporting functions provide multiple options including cover on date, and the all important feed wedge



Cover on Date (All units)
04/11/2005 - 1896 kgDM/ha

P-Plus Demo
File Demonstration
Date 30/01/2006
Page 1

Paddock	Area	Grazed	Shut Up	Cropped	Cover kgDM/ha	Total	Last Cover	Growth kgDM/ha/d
D.3	2.1				1800	3741	2100	
D.4	2.1				2000	4165	2400	
D.5	2.1				1600	3747	2200	
D.6	2.0				1700	3366	1700	
D.7	2.1				2300	4740	1700	20.7
D.9	2.0			Y	2100	4250	2400	
D.10	1.9				2200	4290	2500	
D.11	1.0				1900	1877	1700	6.9
D.12	2.3				2000	4680	2200	
D.13	2.2				1600	3483	2000	
D.14	2.3				2300	5354	1900	13.8
D.15	1.1				2400	2551	1400	34.5
D.16	1.4				2400	3456	2450	
D.18	4.3				1400	6001	1600	
D.19	2.3				1700	3859	1600	3.4
D.21	1.9				2000	3700	1800	6.9
D.22	1.8				2000	3690	2100	
D.23	3.3				3000	9836	2200	27.6
D.24	2.6				1900	4878	2500	
D.25	1.8				1800	3312	1600	6.9
D.26	3.2				2200	7002	1450	25.9
D.28	1.6				2000	3275	2300	
D.30	2.8				2000	5629	1500	17.2
D.31	1.8				900	1664		
D.35	7.5				1700	12784	1600	3.4
D.36	2.4				2600	6110	2300	10.3
D.37	2.7				1600	4333	1800	
D.44	6.5				1700	10988	2100	
	5.5				1600	8738	2000	
	2.1				1700	3570	1600	3.4
Grand Total/Av.	78.6				1896	149049	1931	12.8

Management unit All units

In Pasture covers can form the basis of the Feed Forecaster to determine surplus and deficits by configuring the trend line to meet your farming requirements.

Should you require assistance with setting up your Plate Meter or with installing P-Plus PastureCovers software please contact:

FARMWORKS Precision Farming Systems - Technical Support
Email: support@farmworkspfs.co.nz
Tel: 0900 55512
Fax: 06 323 1371
56 Stafford Street
PO Box 433, Feilding
New Zealand
Or visit www.farmworkspfs.co.nz

FARMWORKS
TOOLS FOR MAXIMUM GROWTH

A number of papers have been written on various aspects of the use of the Rising Plate Meter. The following references may be of interest to users.

1. Lincoln University Dairy Farm (LUDF) Fielday in Dairy Exporter January 2005
2. Rising Plate Meter Ready Reckoner DEXCEL Pasture Growth & Quality
3. Pasture production of northern dairy farms. G.J. Piggot, 1997. Proceedings of the New Zealand Grassland Association 59: 103-106 .Refer Dexcel Website
4. Talking the same language - a New Standardised System of Pasture Assessment -Norm Thomson, DRC, Robyn Hainsworth and Mark Blackwell - Livestock Improvement Advisory
5. Same RPM equation all-year if irrigated – Dairy Exporter January 2005

These papers are available on the DEXCEL website or from the relevant publications.

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Other products sold by FARMWORKS.

In addition to the Electronic Rising Platemeter FARMWORKS provides other tools for the farmer

*** P-PLUS FARM MANAGEMENT SOFTWARE**

A fully functional farm production and mapping program for detailed farm management information. P-Plus consists of a suite of modules including MAPPING, PADDOCK, STOCK, FEED FORECASTER-BUDGET. The PASTURECOVERS module is provided free with the purchase of either the electronic counter or the electronic rising platemeter.

*** PHOENIX**

Phoenix Gateway and Phoenix Power Budget is an easy to use financial program developed by AgData Australia. Phoenix has been specifically configured for New Zealand conditions for cash based for full accrual accounting and budgeting. Prices start at $495 + GST

*** GPS MAPPING**

Using state of the art equipment, highly accurate farm maps can be drawn with accuracy down to 0.5 metres or less. Features mapped can include fencelines, tracks, shelter, troughs, drainage or any other asset. These maps can provide significant cost savings in terms of fertiliser, spray and cultivation inputs as areas measured are not reliant on contractor estimates.

*** DIGITISED MAPPING**

Digitised photography provides an alternative where accuracy is not as critical. Farm Maps can be

*** DESIGN SERVICES – SUBDIVISION**

*** COMMUNICATION WHITEBOARDS**

Laser etched whiteboards provide a valuable communication tool in a variety of situations. With custom designs of farm maps and or grid designs permanently engraved into a hard wearing whiteboard these can form the centre for recording the day to day farm tasks. Ideal for the dairy shed, workshop or office.

- NOTE – Services available in New Zealand Only. Software may be subject to individual Country licencing arrangements.

Visit our website www.farmworkspfs.co.nz to see more about our products.

P-Plus PastureCover

Installation Guide

System Requirements

NOTE: P-Plus PastureCover will run on a Computer/laptop running Windows 98, Windows ME, Windows XP Home/Professional and Vista.

Before you start the installation of the P-Plus PastureCover Software we recommend you to save all current work and exit out of any other windows applications.

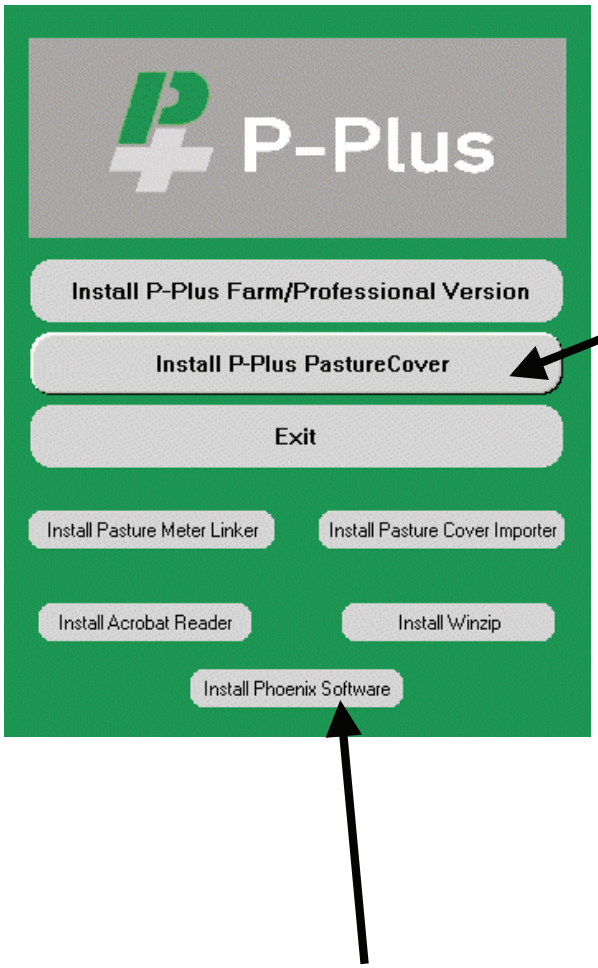
If P-Plus is already installed then start your existing version of P-Plus and perform a full P-Plus backup to your hard disk or USB memory stick. This installation will upgrade all versions newer than 1.87, simply continue to follow the instructions below.

- If your version of P-Plus is older than 1.87 or Farmtracker then call FARMWORKS to discuss your upgrade options.
- If you already have the same version number installed then you do not need to do anything as the latest software is already installed. You may still need to apply for another licence if you have purchased Feed Budget separately or if you have purchased a Tier 2 Pasture Sensor. To apply for a new licence start P-Plus and select "Help" then select "Enter Licence details". See section 3 of this document for more details.
- If you already have P-Plus and use the mapping options then install the Farm/Professional version. You may need to manually create the Rapid Pasture sensor equations manually, if you are using a Rapid Pasture Meter.

Please follow the instructions. If you encounter a problem that cannot be resolved please email support@farmworkspfs.co.nz

1. How to install P-Plus PastureCover

Take the CD and place it in the CD drive.
It should automatically boot and the screen below will appear.

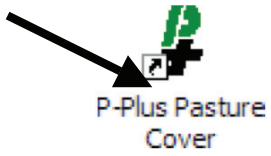


Please ensure you select ***Install the P-Plus PastureCover*** Option

Once you click on '***Install P-Plus PastureCover***' the installation will start automatically.

Simply follow the prompts until the installation is complete.

Once the installation process is complete your desktop image will appear and you will note a P-Plus icon on your desktop.



If you want to trial our financial management software then click on the Install Phoenix Software above. You will be able to view demonstration videos, and install the financial software for trialling purposes. Cash version is $495 + GST and it works with all the major NZ Banks.

Installation Trouble Shooting

If the CD does not auto run please follow these steps:

Go to '*Start*' → Windows

Go to '*Run*' →

Then type ***d:/goppfarm.exe*** and click on '***OK***'.

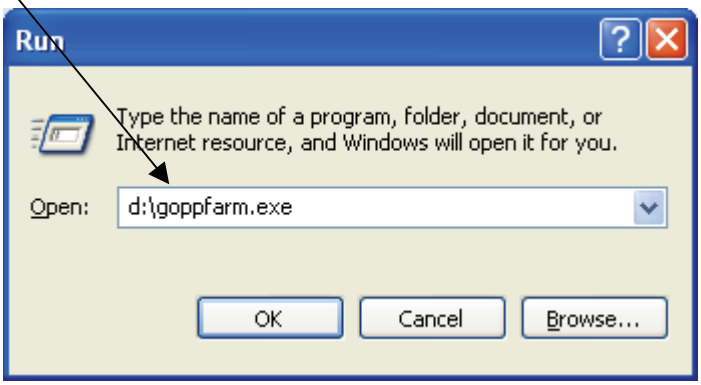


Figure 2 - Manually starting P-Plus Installation

Please note that the letter d refers to the CD Drive letter. The CD Drive letter can vary from computer to computer.
Clicking on '*OK*' should bring up the Installation Window. Then simply follow the prompts.

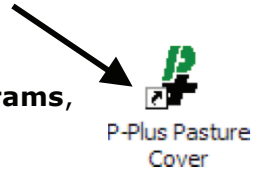
If the 'Installation Window' does not come up please go into '*Windows Explorer*'. *Windows Explorer* may be an icon on your desk top. Alternatively go to '*Start*', then '*Programs*' and scroll through the list until you find it.

1. Open *Windows Explorer*, and go to your CD Drive in the left hand side of the screen.
2. Click on the CD Drive and this will bring up four folders in the right hand side of the screen. Select the '*Program Files*' folder and click on to open.
3. Then select and double click on '*Setup.exe*'
4. This should bring up the Installation Window. Then simply follow the prompts.

Please note that if your CD Drive is over 5 years you may experience problems reading some CDs.

2. How to Run P-Plus PastureCover

Once the installation is complete go to your desktop and double click on your **P-Plus PastureCover** Icon to start the program.



Alternatively; From the windows task bar click on

select **All Programs**, then from the **P-Plus** Program Group, select **P-Plus PastureCover.**

On opening P-Plus PastureCover the window in Figure 3 will appear. This is simply a warning window advising the number of days left in the trial licence to evaluate your P-Plus software.

This screen will disappear when you have registered P-Plus PastureCover correctly.

Please click on **OK** to close the screen.

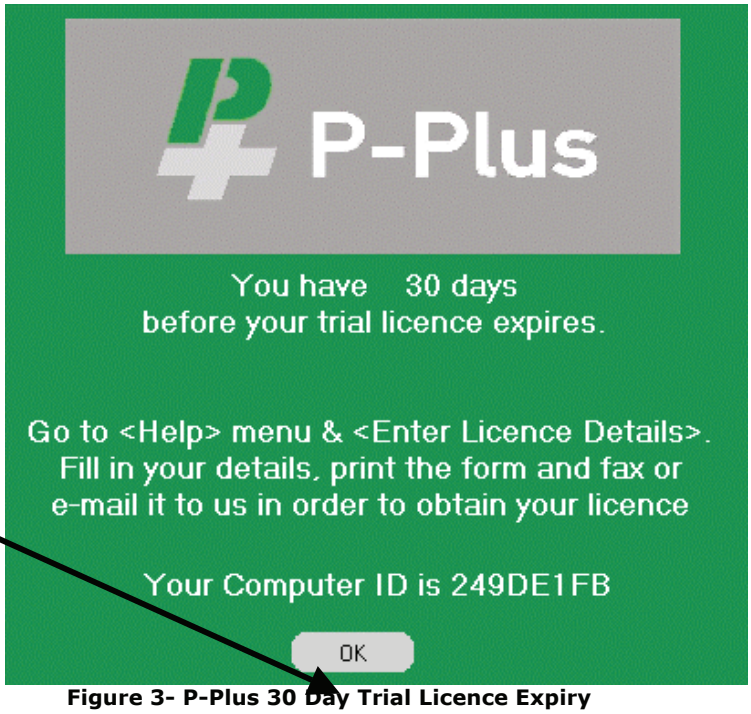


Figure 3- P-Plus 30 Day Trial Licence Expiry Warning

If you are upgrading from a licenced copy of P-Plus, newer than 1.87, then the screen above will not appear.

This screen will automatically appear after ok button is pressed on the 30 day trial period screen. If it does not appear or you want it to reappear then from within P-Plus select **Help** and **Enter Licence Details**. Remember you must request a licence otherwise the software will prevent you from accessing your farm data in 30 days time. Also P-Plus PastureCover will not allow you to print the reports until your software is licenced.

PastureCover Licences are free to purchasers of an Electronic Platemeter or a Rapid Pasture Sensor.

Please ensure that you check the box for PastureCover only, **DO NOT CHECK ANY OTHER BOXES.** When you have completed the licence details, you can select to either email them directly to FARMWORKS or print them off for faxing or posting.

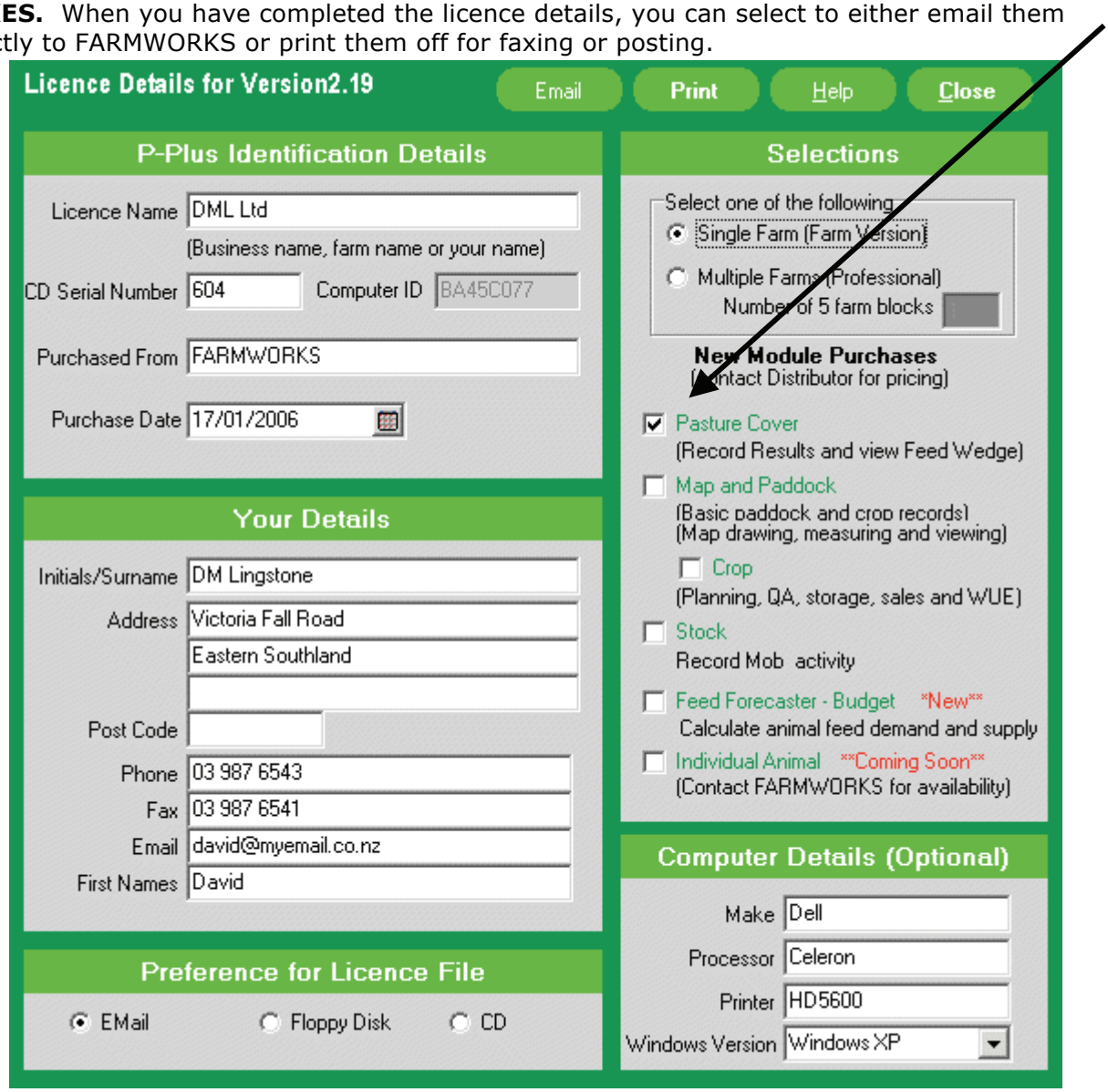


Figure 4 - P-Plus Licence Details

A licence file will be sent to you once the Licence Details have been received and processed by FARMWORKS. Issuing of the Licence file is subject to you complying with the licensing agreement which is attached to the licence email. Allow five working days for your licence file to arrive by email.

Once you have filled out the licence details, click on 'Close' you can now start to set up your farm.

For further assistance, you can refer to the PastureCover Manual section 4, which is available from within P-Plus PastureCover main screen under the PDF Manuals menu.

Please note that you can only create one farm, if you have more than one farm call FARMWORKS for a price for the Professional Pasture Cover software.

NOTE: Licencing is free using email. Licencing via floppy or CDROM will incur a charge of $25 NZ + GST.

When you receive the licence file by email please follow these steps:

1. Open this email from FARMWORKS and detach (save attachments) the **PPCover.lic** into the C:\PPlus directory (browse to my computer, then select c drive, then select the **PPlus** directory, ensure save to location is C:\PPlus)
2. Overwrite the existing **PPcover.lic** file
3. Start P-Plus PastureCover from the ICON on your Desktop
4. P-Plus PastureCover should now be licenced and it should not bring up the 30 day trial licence.
5. Remember to make a new Farm, do not add or edit the demonstration data. Only data entered into your own farm database is saved.
6. If the trial licence still exists, repeat from step 1.
7. If the trial licence is still showing then ensure the ICON on your desktop reads **P-Plus PastureCover**, if it reads **P-Plus** then reinstall from the CDROM and install the **Pasture Cover** module only. See page 1

Re- Licensing

P-Plus PastureCover may need to be re-licenced on a replacement computer or in the event of significant changes being made to your computer. In either case **P-Plus PastureCover** may become unlicenced.

This will require the generation and issue of a new licence file. In this case contact FARMWORKS or print out the licence from the new or modified computer and forward this accordingly. On the receipt of this request for a new licence file this will be emailed back to you where possible. A small charge ($25) will be made to cover costs associated with this to ensure all user details can be maintained to allow support and upgrade conditions to be continued.

Solutions to licencing issues

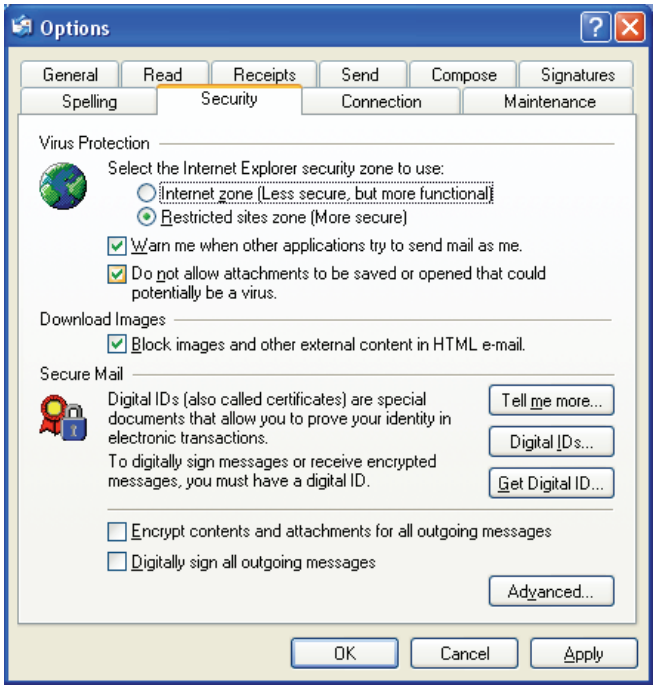
The 30 day trial period screen will not go away, but I have received my licence from Farmworks.

There is often more than one problem. Firstly you may not be saving the **ppcover.lic** to the C:\PPlus directory. Often users are saving it to their **My Documents** directory. You will need to ensure that your press the browse button and then use the scroll bar to select the **PPlus** folder on your Local Disk (usually Drive C). When saving the file to disk, ensure that it pops up the question **"Do you want to over write the existing file?"** By over writing the file you will overwrite the trial licence.

If the file is going into the PPlus folder and the problem still exists then the possible cause is that you could be starting P-Plus PastureCover from the wrong Icon on your desktop e.g. the PPlus icon, instead of the correct Icon, the P-Plus PastureCover Icon. The easy way to check is to look at the ICON on the desktop; if it says **P-Plus** then this will be your problem. Reinstall from CDROM and select the Pasture Cover option, see page 1.

If this still is a problem then reapply for a new licence. Note that your computer ID will change if you have a portable hard disk drive plugged into your computer. We suggest you unplug it and try to start P-Plus PastureCover, this may resolve your problem. If not then restart your computer with the portable hard disk unplugged and try again.

Unable to detach the licence from Outlook Express.


Options
General
Read
Receipts
Send
Compose
Signatures
Spelling
Security
Connection
Maintenance
Virus Protection
Select the Internet Explorer security zone to use:
Internet zone (Less secure, but more functional)
Restricted sites zone (More secure)
Warn me when other applications try to send mail as me.
Do not allow attachments to be saved or opened that could potentially be a virus.
Download Images
Block images and other external content in HTML e-mail.
Secure Mail
Digital IDs (also called certificates) are special documents that allow you to prove your identity in electronic transactions.
To digitally sign messages or receive encrypted messages, you must have a digital ID.
Tell me more...
Digital IDs...
Get Digital ID...
Encrypt contents and attachments for all outgoing messages
Digitally sign all outgoing messages
Advanced...
OK
Cancel
Apply

1. Outlook is preventing the file from been saved, by default Microsoft Outlook express will not allow attachments to be saved.
2. To enable this function open MS Outlook Express and select Tools, then Options, then click on the security tab.
3. Untick the box **Do not allow attachments to be saved or opened that could potentially be a virus**.
4. Close MS outlook and reopen.
5. Then follow the instructions that came with the licence file to detach the licence file.

P-Plus software becomes unlicenced when it was licenced before
This tends to occur when an external USB hard disk drive is connected which then changes your computer ID and causes the P-Plus software to expire. The problem can be overcome by removing the extra hard disk drive and restarting the P-Plus program. If you are going to keep the external drive plugged in all the time then you will need to apply for a new licence file. Please contact FARMWORKS for this.

Should you require further information please contact:

FARMWORKS Precision Farming Systems
56 Stafford Street
PO Box 433, Feilding
New Zealand
Fax: 06 323 1371
Email: info@farmworkspfs.co.nz
www.farmworkspfs.co.nz

FARMWORKS Precision Farming Systems - Technical Support
Email: support@farmworkspfs.co.nz
Tel: 0900 55512

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TOOLS FOR MAXIMUM GROWTH

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PastureCovers User Guide – Section 4 from the Full Manual

The PastureCover module records pasture covers for the farm and will provide information on the individual paddock pasture covers, feed availability, the feed wedge and in time pasture growth rates. This module can be installed separately or in conjunction with the full P-Plus program. The PastureCover module is a companion to the FARMWORKS platemeter and the Rapid Pasture Meter although it is also useful to complement other pasture measuring devices.

This Section consists of the following components

- The PastureCover Setup Screen
- The PastureCover Main Screen
- The Add/Edit Screen
- The Target Covers Window
- Entering First PastureCover
- PastureCover Reports

PastureCover is free to the purchaser of a FARMWORKS platemeter or Rapid Pasture Meter. If you have purchased extra modules you do not need to install the PastureCover module as it is free with any other module purchase. Simply install P-Plus as per the instructions that came with the CDROM

For installation instructions for P-Plus PastureCover, refer to the P-Plus PastureCover installation guide that came with the CDROM or platemeter or Rapid Pasture Meter.

4.1 PastureCover Setup

When you have installed P-Plus PastureCover and sent the licence request to Farmworks then you can setup your farm.

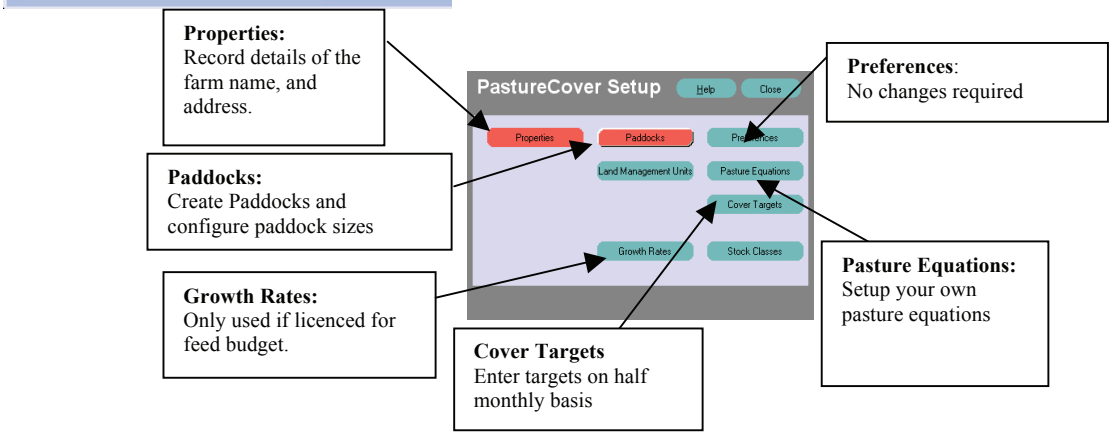
Installation and licencing is covered in the P-Plus PastureCover installation guide that came with the CDROM.

Once you have filled in the licence information you are ready to set up your farm. Note if licence form is showing then select Close.

Firstly to create your new Farm, click on the Farm menu and select Create New Farm.

The 'Enter a Farm File Name' prompt will appear. Note if P-Plus says farm licence already reached, then go to the Farm menu and then click on "Select Farm". There should be two farms in the list, one being the Demonstration Farm and the other your own Farm. Click on your farm and click select.

Please enter your farm name and click on 'OK'. This will bring up the 'PastureCover Setup' screen.

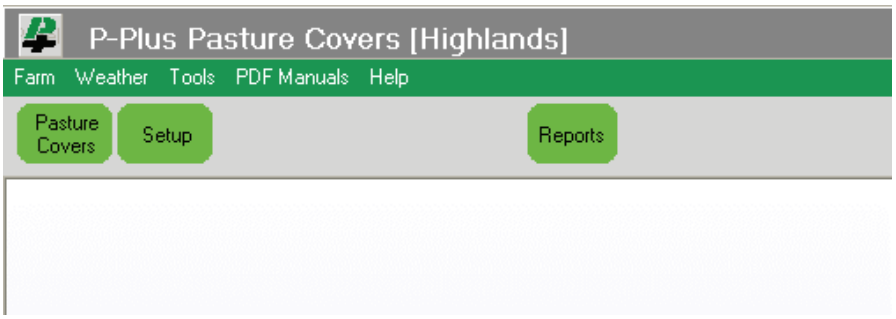


The PastureCover Setup screen allows you to

- configure your land Preferences (see section 3.1)
- create and edit properties (see section 3.2)
- create and edit paddocks (see section 3.3)
- configure pasture equations (see section 4.7)
- enter Cover targets (see section 4.4)

NOTE: - At a minimum ensure that you have created your paddocks and setup the paddocks sizes.

Once the task is completed click on the Close button to move on. The P-Plus PastureCover screen will appear. See below.



4.2 The PastureCover Main Screen

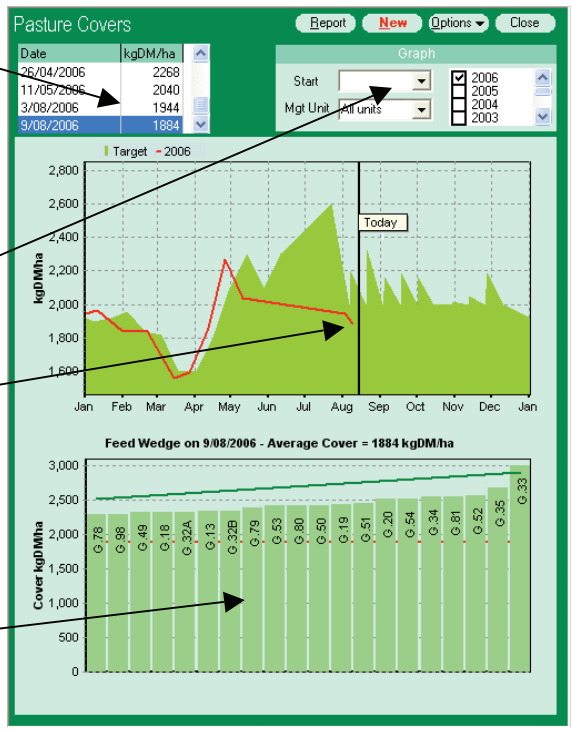
Click on the pasture covers button and the screen below will appear. Your screen will not have as much information on it yet, but once you have setup a few things and enter a few months of covers it will begin to look like the screen below.

List of PastureCover undertaken by date with average cover per hectare

Start date of reporting year to display on graphs along with years used

Target Cover (green shade)
Current (today's) Cover (black vertical line)
Previous covers by

Feed Wedge: of the top twenty paddocks (green) and the average cover line (red). The green line is the "trend"



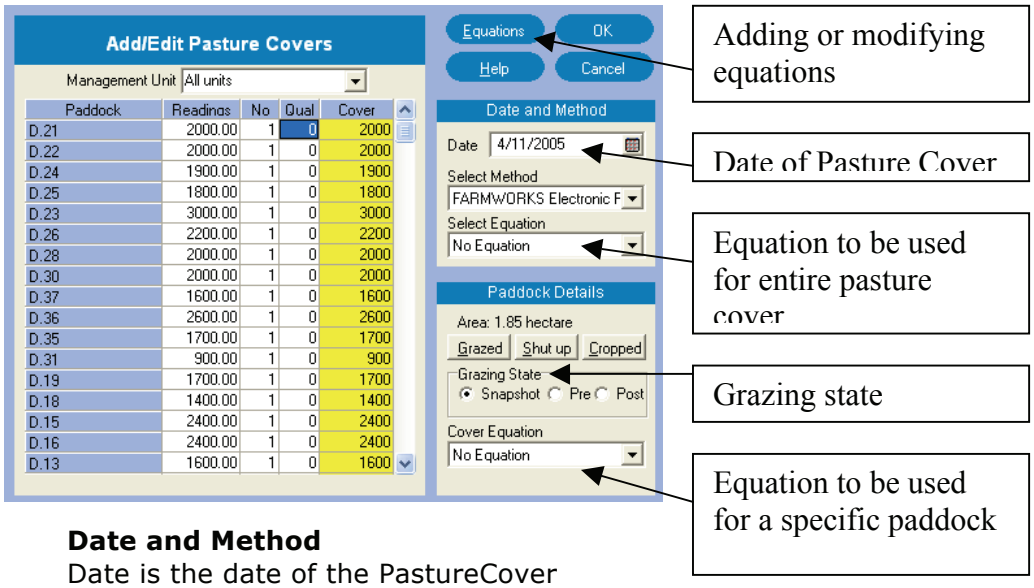
The **New** button: Brings up the Add/Edit Pasture Cover Window, see section 4.3 The Add/Edit Screen for Pasture Covers. This window is the entry screen for recording pasture covers. Before recording, select the method to be used for recording (manual, eyeball, FARMWORKS Electronic Platemeter etc.) as well as the Pasture Equation.

The **Options** button provides the following:

- Edit Covers - edit an existing cover already recorded
- Delete a cover
- Show the graph key for the years of colours available
- Redraw the graph - refreshes the graph
- Edit the Target Covers

4.3 The Add/Edit Screen for Pasture Covers

Click the Equations button to add or modify the plate meter or rapid pasture sensor equations



Date and Method

Date is the date of the PastureCover

Select Method is the PastureCover method used e.g.: no equation, FarmWorks Electronic Plate Meter, etc

Select Equation – no equation by default

When using a manual plate meter with two counters select Rising Plate. This will allow you to type the start and end readings from the bottom counter and also the plonk count. P-Plus PastureCovers will do the maths and work out the average cover.

Paddock Details:

Paddocks can be included in the walk or excluded by clicking on these buttons. These will record if the paddock has been grazed, has been shut up (e.g. for silage or hay) or are being cropped. As a consequence these can be removed from the average cover. You must use the cover reports to exclude these paddocks, the default feed wedge and average cover does take these options into account.

If you are using the FARMWORKS Electronic Platemeter and you are entering Kg's of DM select the **no equation** equation. If you are entering Height select the appropriate equation.

Grazing State

- A pre-grazing measurement is taken just before it is grazed off by a mob of animals.
- A post-grazing measurement is taken just after a mob of animals has been moved off a paddock to determine the residual cover.
- A snapshot measurement is the normal type of measurement taken during a full farm pasture assessment when the paddock has an intermediate level of cover.

At this time no decisions are made on this data, but in future versions, the grass grown and grass growth reports will use this information, and thus give far more reliable grass data. In the meantime we suggest setting the pre, post or snapshot flags correctly so that future reports will have a good history of pre-grazing and residual measurements to work with.

Walk (Ride) Order

The "walk order" is the order that the paddocks are visited when performing a set of pasture cover measurements over an entire property. The "walk order" is used when the Cover Entry form is printed out to place paddocks in the sequence that they are visited. Also in the Add/Edit Pasture Covers screen, the walk order is used to determine how the paddocks are ordered.

To configure the Walk (Ride) order, click on the Farm menu, then select Setup, then choose Paddocks - refer to Section 3.7.

In the top right corner of the paddock edit window is the walk number; adjust this number to modify the walk order. You will need to change the shift option to from List order to Walk Number to see the effect of changing the walk order. The move up and move down buttons are a quick and easy way to adjust where a paddock appears in the walk order. To enable the move up and move down buttons, first select one particular property rather than the "all properties" option.

Equations

Refer section 4.7

4.4 The Target Covers Window

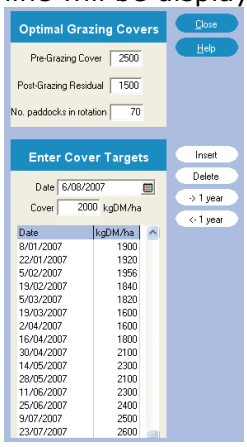
Optimal Grazing Cover: Set the desired/preferred grazed residual and desired/preferred max pasture cover. These settings will be used by the trend line and will easily show paddocks above or below your desired pasture cover. These values are used on the default feed wedge and the feed wedge displayed from the reports.

Target covers: Target covers can be set so you can see how the farm average cover is trending as compared to how you hoped it would.

To set the Target Covers click on the Options button and Edit Target Covers. Press the Insert button to add a date; the date will typically be 14 days ahead of the last date in the list. These dates can be changed to give a spacing of one month for example. Use the scroll bars to move around the list of dates.

Once this is completed click on the Close button and the targets will be shown on the middle screen.

The target covers and preferred trend line will be displayed on the feed wedge.



4.5 Entering First Pasture Cover

To enter your set of pasture cover measurements, click on the New button and the Add Edit Pasture Cover screen will be displayed.

Ensure you enter the correct date and method in the right hand window. If you are using the F150 (FARMWORKS Electronic Platemeter) then select the method as FARMWORKS Electronic Rising Plate. For the Rapid Pasture Meter – select the Pasture Meter method

There are two main categories of equation available.
1) The first category of equation is when the measurement you wish to enter is already in units of KgDM/Ha. The cover may have been assessed by eye, or the conversion from height to KgDM/Ha may have already been performed externally by an electronic rising plate meter or the Rapid Pasture Meter. This is normally the first equation that appears in the list and is called Height/Eyeball/No Equation/Actual. It is recommended that this equation is used for electronic rising plate meters.

2) The second category of equation is used when a raw height measurement in mm or cm is entered and the conversion of height to KgDM/Ha is performed internally by P-Plus. P-Plus comes with some pre-canned equations relevant to common pasture measurement devices. If you wish to enter a personalised equation, click on the Equations button at the top of the screen.

On the left hand side of the screen the readings that you have taken from the electronic rising plate meter or the Rapid Pasture Meter in kilograms of dry matter per hectare. If you have only recorded height, then you will need to change the equation relevant to the type of measurement device and season e.g. Pasture Meter Winter

After entering all pasture covers for all paddocks you can click on the **Close** button. On the middle screen the red line will be shown, along with a black line indicating the current date.

The feed wedge can be displayed at the bottom of the pasture covers and will provide the top 20 paddocks of the total feed wedge. If you wish to see all the paddocks, you will need to print this out via Reports. Note - You can not print until you receive the licence file from our support staff.

At any time you can edit the pasture covers by double left clicking on the date of the cover that you wish to edit and alter the figures accordingly. This also applies to the cover targets which can be edited at any time

4.6 PastureCover Reports

There are a number of different reports that can be selected for reporting your cover. The main reports are: Cover On Date; Feed Wedge On Date; Cover Graph; and the Cover Entry Form.

Cover on Date: This will provide a cover report for each paddock whose cover was measured on a particular date. The Report window has a number of options that can be selected to include extra information. This can include items such as paddocks shut up for hay, paddocks already grazed, or paddocks taken out for crop(ping). This will have an influence on the total cover, or average cover displayed for the property. Use the scroll bar to see the lower part of the page. The report can be sorted by cover, by selecting the Sort/Group Data option. Note the growth shown is the growth between walks, NOT average growth. Average Growth will be displayed in a future version, BUT you must use the pre-grazing and post –grazing flags when entering your pasture covers for this new report to work.

Cover on Date (All units)

7/08/2006 - 1881 kgDM/ha

	P-Plus Demo
File	No4
Date	7/08/2006
Page	1

Pad Nu	Paddock Name	Area	Grazed	Shut Up	Cropped	Pre/ Post Flag	Cover kgDM/ha	Total	Last Cover 3/08/2006 1	Growth kgDM/ha/d
1	G.1	2.2					1202	2596	1222	
3	G.2	2.9					1333	3879	1333	
4	G.3	2.6					1434	3685	1444	
5	G.4	3.0					1544	4678	1555	
6	G.5	2.6					1666	4265	1666	
7	G.6	2.7					1777	4727	1777	
8	G.7	2.6					1888	4965	1777	27.8
9	G.8	2.6					1999	5277	1888	27.8
11	G.15	3.2					2000	6480	2333	
12	G.16	2.4					2111	4982	2444	
13	G.17	2.4					2232	5357	2555	

Feed Wedge on Date: This report is far more configurable than the default feedwedge that is automatically displayed. You can display all paddocks not just the top 20, and exclude cropped and shut up paddocks. If you require you can adjust the kgDM/ha range for example 1700-2300 kgDM/ha so you can more easily see the difference between the paddocks. To adjust the kgDM/ha double click on the graph and another window will appear. Set the minimum and maximum value as required. The green trend line is configured from the Target Covers Window – Section 4.4

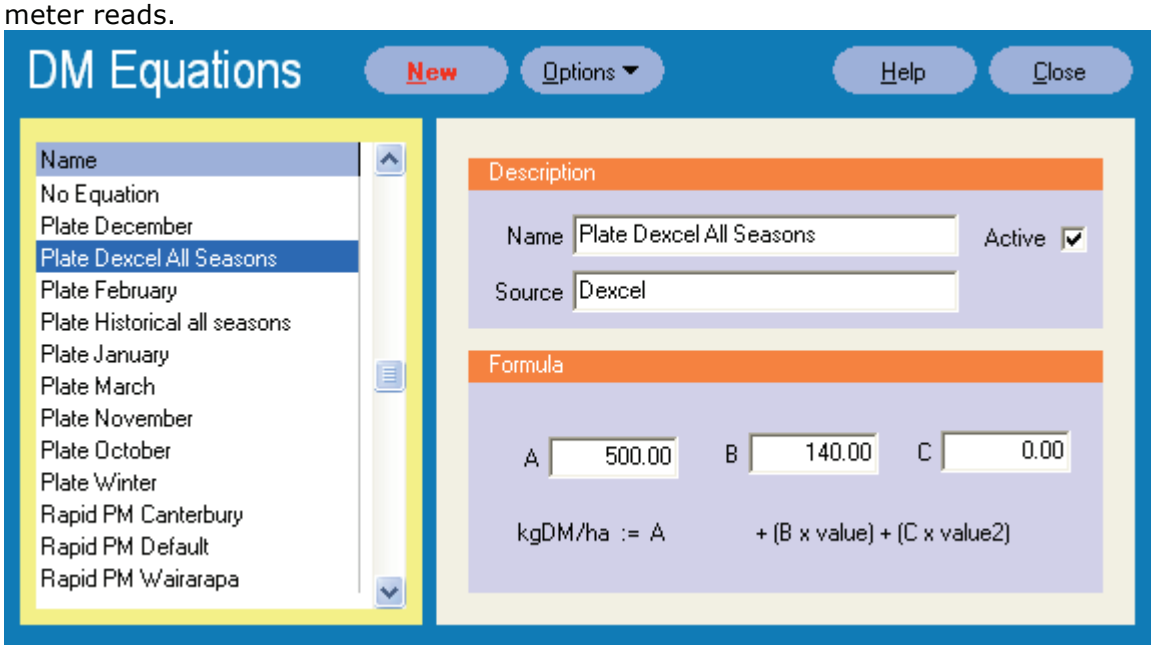
Cover Graph: Graphs the average farm cover by year. Also shows the cover target line as well. Can be used to compare different year's average cover on the farm

Cover Entry Form*:* Prints a form to write down your paddock covers. The paddocks are in your walk order or list order and each paddock has the last two covers available so you can see how each paddock compares to its previous readings while out on the farm. HINT – Fold the printed form in half long ways and staple onto a piece of hard cardboard. The sheet should fit in your pocket while still displaying all the information you need while out on the farm.

4.7 Pasture Cover Equation

The cover equations provides a mechanism for taking pasture height measurement (e.g. a rising plate meter) or other measures such as the pasture probe and converting these to KgDM/ha. The range of equations can be extensive and you will need to refer to the relevant operating manual for the given tool. There will be different equations for different times of the year to allow for variations in the physiological state of the pasture (vegetative, flowering, and seeding) and the pasture composition.

If you are using a FARMWORKS Electronic Rising Plate Meter then this section does not apply as the mathematics is already performed on the plate meter in this case the equation is set to the height or no equation as the multiplied value, B=1. It is important to ensure you are using the correct equation to calculate the KgDM/ha value, given the pasture height the plate meter reads.



The F200 Farmworks Electronic Rising Plate Meter default equation is the modern equation (140 + height x 500) and is used throughout New Zealand.

A more accurate calibration can be achieved by taking cuttings, or your consultant may be able to advice you on the most appropriate equation for you.

Today DEXCEL are promoting a new range of equations to more accurately reflect the changes in the growth stages of the pasture. There may be some modification to these equations depending on the season and the influences of management practices. E.g. irrigation.

Check with your DEXCEL or other consultant for the latest equations.

You may choose to select your Plate Meter to not calculate the KgDM/ha and use the equations. This gives you the ability to use a different equation if you feel the monthly equation is not suitable for your pasture.

To configure the equation,
A is the add figure
B is the multiply figure

Examples of Equations

No equation	A=0	B=1	C=0
Plate Dexcel All Seasons	A=500	B=140	C=0
Rapid PM Default	A=750	B=18.6	C=0

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P-Plus Farm Management Software
Top 14 Questions

Here are some of the common questions asked about farming software and what P-Plus can do for your management operation.

1. What is P-Plus?

P-Plus is an integrated paddock, pasture covers, fertiliser recording, farm mapping, feed budgeting and planning program. It is a modulated software package where each module can be stand alone for a specific area of farming or can be integrated (run together) with more than one module. Thus information entered once is available directly within other modules.

P-Plus suits a full range of farming systems, types and sizes. There are two packages available, P-Plus *Professional* and P-Plus *Farm*.

- P-Plus *Professional* is recommended for users who wish to manage multiple farms in the one system. The licence allows a maximum of 5 farms per licence.
- P-Plus *Farm* is recommended for users with one farm.

2. What Farming Types can we use the program for?

Any farming activity can be accommodated including dairy, sheep, beef, deer, goats. Dairy farmers find P-Plus specifically suits their needs, as the Pasture Cover module links very well in with their map, thus giving a visible display of the pasture availability. The Pasture Cover module includes a feed wedge and grazing round report to simplify your grazing planning. Most dairy farmers who have purchased the Map and Paddock modules to begin with, later purchase the Feed Forecaster Budget and stock modules to complete their farm management system.

3. How many modules are there and what are they?

There are four key sales modules and three minor modules. The minor modules are incorporated in the key sales modules.

The modules are:

Map & Paddock (includes Weather and PastureCover)

Map – this enables you to utilise a GPS map, an aerial photo or an existing map. You can create maps, measure paddocks, alter fences, plus create a host of layers of information including drainage, water supply, trees, and physical features such as contours, soils and productive areas. You can load GPS data (some conditions apply), or images which are in a jpg or bmp file format.

Paddock– monitor fertiliser and pesticide applications plus any activity associated with paddocks including cash inputs and outputs. The Crop module is a subset of the Paddock module and allows for Crop planning, storage and sales details to also be recorded within P-Plus.

PastureCover – for recording pasture covers from plate meters and other measuring devices; to provide covers over time, growth rates and feed wedges. This is provided free with any purchase of the FARMWORKS Electronic Rising Plate Meter or the C-DAX Rapid Pasture Meter. PastureCover also runs as a standalone module for those only wanting to record their pasture cover details.

Stock – Used in conjunction with the paddock module, you can record grazing records; also includes stock reconciliation details which link in with the Full Feed Budget.

Feed Forecaster - Budget– for dairy, sheep, beef and deer. Enables daily, weekly, and annual budgeting. Farmers can proactively anticipate and therefore more effectively manage their feed plan and requirements. (Includes Weather and PastureCover modules)

Individual Animals (currently under development) - ideal for recording commercial operations relating to individual animals such as weight and production records (not genetic). Suitable for dry stock or bull beef operations, where weight recording is important.

Minor Modules include:
Farm Records – maintain a list and record of your farm assets.
Weather – maintain weather data or import historical records, and provides reports.

4. Do I have to buy the full program?

P-Plus is sold based on a minimum package combination that includes Mapping & Paddock, as described above. Additional modules* can be added to your P-Plus system at any time and are fully integrated. It merely requires a new registration to activate the other modules. Let us discuss the best options to suit your needs. Pricing depends on the combination of modules you require and is detailed in Question 11.

*Note that the Individual Animal module is currently under development and is not yet available.

5. Computer Specifications

5.1. What size computer will P-Plus operate on and what version of Windows do I require?

We recommend the following computer specification for P-Plus:

- Operating system: Windows ME, 2000®, XP® or Vista® (32 bit only)
- CPU: 1.00GHz
- RAM / Memory: 256MB minimum – recommend 512MB, 1GB (Vista)
- CD ROM Drive DVD/CD –RW combo drive
- Monitor: SVGA
- Windows compatible mouse.
- Windows compatible printer.
- Internet and email Access for licensing and support

Note that the software will operate on lower specification PCs, however processing will be slower and some will struggle to manage the large map or aerial photo files. If in doubt contact FARMWORKS to discuss.

Note: P-Plus PastureCover will run adequately on Windows 95 (release 2) or Windows 98 as a standalone package.

5.2. How do I find out the specification of my current PC?

Follow these steps:

1. Go to 'Control Panel
2. Select 'System'
3. Select the 'General' tab which will display the following details:
   System – i.e. Details of the operating system, e.g. Windows XP
   Registration – i.e. who the operating system is registered to, Jo Blogg
   Computer – the computer specification, CPU type / size and RAM / Memory

If you are not sure about your computer configuration, get in touch with the dealer who sold you the computer and ask them to confirm your exact configuration.

6. What benefits are there in using the software?

You have the ability to record daily activities of stock movements, pasture, feed budgeting, plan subdivisions, measure pastures, fence lines, drains etc, plus maintain a record of revenues and costs. Maps provide an excellent communication medium for staff and contractors, which can be printed out for distribution.

With quality assurance and auditing needs P-Plus has significant advantages. The Feed Forecaster-Budget module allows you to proactively manage your feed situation rather than waiting until you are on top of a feed issue. Whiteboards can be engraved with your map on them, simply email to our support team and they will assist you.

7. What management decisions can we make utilising the software?

Depending on the module you use, you can do a number of regular operations:

- Pasture cover reporting in conjunction with your plate meter or Rapid Pasture Sensor.
- Produce grazing rounds for diary farms or intensive beef operations.
- Prepare feed budgets, daily, weekly, yearly.
- Plan fertiliser applications to minimise over ordering
- Plan new fence lines, build farm maps, water systems, drainage systems etc.
- Provide contractors with property details for fertiliser or pesticide applications
- Report stock reconciliations

8. Does P-Plus have a regular upgrade policy and support?

Support is provided free for the first 60 days with ongoing support available via a 0900 telephone line; although email support is currently free for non specific general assistance. Alternately, contact can be made on the main office number as we can then charge on an incident based support charge. We have our own internal software writers with new special features constantly under development. New releases are dependent on the completion of development milestones. Your input is highly valued in terms of adding new features.

9. What special features does P-Plus offer?

- P-Plus can directly import GPS maps generated through our GPS mapping service as well as other line features such as soils and contours, referred to as shape files.
- Garmin GPS60 handheld units can be used to create a map of your farm, or to draw new features on your farm map.
- The Feed Forecaster-Budget is easy to configure and use with all the complexity behind the scenes.
- Integration with the C-DAX Rapid Pasture Meter is now available via Bluetooth.
- All modules can be standalone or integrated into one system, as required. You do not have to purchase the full program.

10. What do I have to do to get started with P-Plus?

We can send you a demonstration disk or you can download P-Plus from our website. All the modules will be enabled for a trial period of 30 days. Prior to the end of this period you will need to purchase the relevant modules before you can continue using the software. The new modules cannot be registered until Farmworks has received and processed payment for them. Any data you have entered during the trial period will be available for you to continue with after registration is complete.

If Farmworks have drawn a farm map for you, for a small fee we can load the map file into the demonstration version so that you can evaluate the software as it relates to your property.

11. Can I do my accounts with P-Plus?

Included on the P-Plus CDROM is a full featured financial package **(Phoenix)** for Cash and accrual accounting specifically designed for farming applications. A free 500 transaction trial is included, and prices start at $495 + GST

12. What are the purchase options (RRP)? All Prices NZ$

	Excl GST	Incl GST
P-Plus *Professional* P-Plus *Professional* is recommended for users who wish to manage multiple farms in the one system. The licence allows a maximum of 5 farms per licence. Includes 2 licences (use with Desktop and Laptop or second desktop).		
Map & Paddock Module (Maximum 5 farms)	$850.00	$956.25
Stock Module (Maximum 5 farms)	$300.00	$337.50
Feed Forecaster-Budget Module	$460.00	$506.25
Individual Animal Module - *Under Development Release 07*	$450.00	$506.25
Additional Site Licences (5 farms)	60% of purchase price	
P-Plus *Farm* P-Plus *Farm* is recommended for users who wish to manage one farm in the system.		
PastureCover Module	$110.00	$123.75
Map & Paddock Module	$750.00	$843.75
Map Module Only (Includes PastureCover)	$250	$281.25
Stock Module	$200.00	$225.00
Feed Forecaster-Budget Module – (Includes PastureCovers)	$370.00	$393.75
Individual Animal Module - *Under Development Release end 07*	$350.00	$393.75
Farmworks map file to P-Plus conversion (recreates farm map ready to load in P-Plus, includes paddocks names and all applicable layers)	$60.00	$67.50
P-Plus *Installation and Training*		
Onsite Training - 2 hours single user	$250.00	$281.25
Offsite Group Training – per person/4hrs	$250.00	$281.25
Travel – may be possible we can combine with another job to save on costs.	$.48 per Km	$.54

Farmtracker, Endeavour, Landmark crossgrades are 60% of RRP.

All software prices include 60 days free technical support from date of registration. FARMWORKS operates a 0900 55512 Support Line for ongoing technical support.

13. Where do I get an Aerial Photo?

If you choose to draw your farm map you may need an aerial photo. There are a number of aerial photo suppliers. For a free photo check the LINZ website www.linz.govt.nz be aware they are older photos. A lot of councils have new aerial photos available at very good prices. Alternatively you can get new colour aerial photos from Terralink or NZ Aerial Mapping, prices start from $345. FARMWORKS can assist you in getting the aerial photo, we would require your land title information from your rates bill, or two GPS points from the two furtherest points on your farm. In some areas there are private companies that will fly your farm and provide a digital farm photo.

14. Can I buy P-Plus locally?

At this time we have software dealers in Northland, Waikato, Manawatu, Wairarapa, South Otago and Southland. Give us a call for more information or check our website; also more dealers are coming available all the time.

15.Can I connect a handheld GPS device to P-Plus?

Yes you can. P-Plus communicates with the Garmin Etrex Legend, Garmin GPS 72, Garmin GPS 76, Garmin GPS 60, and Garmin GPS 60MAPCSx. This will allow you to take waypoints on every fence post on your property then simply join the dots in P-Plus to create your farm map. Farmworks have Garmin Handheld GPS units for sale; priced from $350 + GST.

Should you require further information please contact:

In the UK the F200 Platemeter is supplied to you by
Agricultural Supply Services.
01453 860860
www.agrisupplyservices.co.uk

FARMWORKS
TOOLS FOR MAXIMUM GROWTH

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